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Attorney Docket No.: 019957-013821US

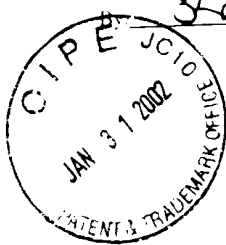
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TOWNSEND and TOWNSEND and CREW LLP



Karen Iovino

Karen Iovino

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Shawn DeFrees *et al.*

Application No.: 09/757,289

Filed: January 8, 2001

For: LOW COST MANUFACTURE OF OLIGOSACCHARIDES

Examiner: Not Yet Assigned

Art Unit: 1652

INFORMATION DISCLOSURE
STATEMENT UNDER 37 CFR §1.97 and
§1.98

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Washington, D.C. 20231

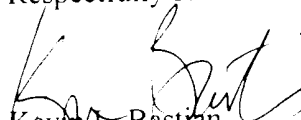
Sir:

The references cited on attached forms PTO/SB/08A and PTO/SB/08B are being called to the attention of the Examiner. In accordance with 37 CFR §1.98(d), copies of the references can be found in Application No. 09/442,111, filed November 17, 1999 (Attorney Docket No. 019957-013820US). Also enclosed is a copy of the Search/Examination report corresponding to the PCT application. It is respectfully requested that the cited references be expressly considered during the prosecution of this application, and the references be made of record therein and appear among the "references cited" on any patent to issue therefrom.

As provided for by 37 CFR 1.97(g) and (h), no inference should be made that the information and references cited are prior art merely because they are in this statement and no representation is being made that a search has been conducted or that this statement encompasses all the possible relevant information.

Applicants believe that no fee is required for submission of this statement, since it is being submitted prior to the first Office Action. However, if a fee is required, the Commissioner is authorized to deduct such fee from the undersigned's Deposit Account No. 20-1430. Please deduct any additional fees from, or credit any overpayment to, the above-noted Deposit Account.

Respectfully submitted,


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PTO SB 08A (08-00)

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Substitute for form 1449A-PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 3

Complete if Known

Application Number 09/757,289
Filing Date January 8, 2001
First Named Inventor Shawn DeFrees et al.
Group Art Unit 1652
Examiner Name Unassigned
Attorney Docket Number 019957-013821US

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
	AA	5,705,367		Gotschlich	Jan. 6, 1998	
	AB	5,798,233		Gotschlich	Aug. 25, 1998	
	AC	5,541,083		Paulson et al.	Jul. 30, 1996	
	AD	5,922,577		DeFrees et al.	Jul. 13, 1999	
	AE	5,945,314		Prieto et al.	Aug. 31, 1999	
	AF	5,047,335		Paulson et al.	Sept. 10, 1991	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T ⁶
		Office ³	Number ⁴	Kind Code ⁵ (if known)				
	AG	PCT	WO 98/44145		Prieto	Oct. 8, 1998		No
	AH	EPO	EP 0870841 A1		Koizumi	Oct. 14, 1998		No
	AI	EPO	EP 0861902 A1		Koizumi	Sep. 2, 1998		No

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Date Considered

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¹ Unique citation designation number ² See attached Kinds of U.S. Patent Documents ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST 3) ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST 16 if possible ⁶ Applicant is to place a check mark here if English language Translation is attached

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet **2** of **3**

Complete if Known

Application Number	09/757,289
Filing Date	January 8, 2001
First Named Inventor	Shawn DeFrees et al
Group Art Unit	1652
Examiner Name	Unassigned
Attorney Docket Number	019957-013821US

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	AJ	Endo <i>et al.</i> , "Large-scale production of N-acetylglucosamine through bacterial coupling," <i>Carbohydrate Res.</i> 316:179-183 (1999).
	AK	Koizumi <i>et al.</i> , "Large-scale production of UDP-galactose and globotriose by coupling metabolically engineered bacteria," <i>Nature Biotech.</i> 16:847-850 (1998).
	AL	Vimr and Troy, "Regulation of Sialic Acid Metabolism in <i>Escherichia coli</i> : Role of N-Acylneuraminase Pyruvate-Lyase," <i>J. Bacteriol.</i> Vol. 164, No. 2, 854-860 (1985).
	AM	Mergaert <i>et al.</i> , "The nodulation gene <i>nolK</i> of <i>Azorhizobium caulinodans</i> is involved in the formation of GDP-fucose from GDP-mannose," <i>FFBS Letters</i> 409:312-316 (1997).
	AN	Gonzales-Clemente <i>et al.</i> , "High Production of polysialic Acid [Neu5Aca(2-8)-Neu5Aca(2-9)] _n by <i>Escherichia coli</i> K92 Grown in a Chemically Defined Medium," <i>Biol. Chem. Hoppe-Seyler</i> , Vol. 371, pp. 1101-1106 (1990).
	AO	Cho and Troy II, "Polysialic acid engineering: Synthesis of polysialylated neoglycosphingolipids by using the polysialyltransferase from neuroinvasive <i>Escherichia coli</i> K1," <i>Proc. Natl. Acad. Sci. USA</i> 91:11427-11431 (1994).
	AP	Williams and Wimpenny, "Extracellular Polysaccharide Biosynthesis by <i>Pseudomonas</i> NCIB 11264. Studies on Precursor-forming Enzymes and Factors Affecting Exopolysaccharide Production by Washed Suspensions," <i>J. of Gen. Microbiol.</i> 116:133-141 (1980).
	AQ	Mengin-Lecreux <i>et al.</i> , "Pool Levels of UDP N-Acetylglucosamine and UDP N-Acetylglucosamine-Enolpyruvate in <i>Escherichia coli</i> and Correlation with Peptidoglycan Synthesis," <i>J. of Bacteriology</i> , Vol. 154, No. 3, 1284-1290 (1983).
	AR	Lloret <i>et al.</i> , "Genetic analysis of the transcriptional arrangement of <i>Azotobacter vinelandii</i> alginate biosynthetic genes: identification of two independent promoters," <i>Mol. Microbiol.</i> 21(3):449-457 (1996).
	AS	Lindahl <i>et al.</i> , "Regulated Diversity of Heparan Sulfate," <i>J. Biol. Chem.</i> 273(39):24979-24982 (1998).
	AT	Zacharek <i>et al.</i> , "Bacteria Targeted by Human Natural Antibodies Using α -Gal Conjugated Receptor-Specific Glycopolymers," <i>Bioorg. Med. Chem.</i> 7:1549-1558 (1999).

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Date
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* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

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Sheet 3 of 3**Complete if Known**

Application Number	09/757,289
Filing Date	January 8, 2001
First Named Inventor	Shawn DeFrees <i>et al.</i>
Group Art Unit	1652
Examiner Name	Unassigned
Attorney Docket Number	019957-013821US

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OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	AU	Wang <i>et al.</i> , "Enhanced Inhibition of Human anti-Gal Antibody Binding to Mammalian Cells by Synthetic α -Gal Epitope Polymers., <i>J. Amer. Chem. Soc.</i> , 121(36):8174-8181 (1999).	
	AV	Kawaguchi <i>et al.</i> , "An Improved Method for the Fermentative Production of GDP-mannose from 5'-GMP", <i>J. Ferment. Tech.</i> 49(3):195-201 (1971)	
	AW	Kawaguchi <i>et al.</i> , "Studies on Microbial Metabolisms of Sugar Nucleotides, Part V., "Effects of Various Factors on the Fermentative Production of GDP-mannose, GDP and GTP from 5'-GMP by Air dried Cells of Baker's Yeast," <i>Agr. Biol. Chem</i> 34(6):908-918 (1970).	
	AX	Janczuk <i>et al.</i> , "Alpha-Gal oligosaccharides: chemistry and potential biomedical application," <i>Curr. Med. Chem.</i> 6(2):155-64 (1999)	
	AY	Gilbert <i>et al.</i> , "The synthesis of sialylated oligosaccharides using a CMP-Neu5Ac synthetase/sialyltransferase fusion," <i>Nat. Biotech.</i> 16:769-772 (1998).	

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